Attorney Docket: 060258-0277995 Client Reference: 2990563US/LT/HER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent 7,058,148 B1 to HUTTUNEN Issue Date: June 6, 2006

Application No.: 09/807,131 Group Art Unit: 2634

Filed: May 23, 2001 Examiner:

Title: METHOD FOR SELECTING MODULATION DETECTOR IN RECEIVER, AND RECEIVER

REQUEST FOR CERTIFICATE OF CORRECTION

U.S. Patent and Trademark Office
Customer Window – Certificate of Correction Branch
Randolph Building
Alexandria, VA 22314

Sir:

In reviewing the above-referenced patent grant, Applicant noted that the Amended Title, filed with a Rule 312 Amendment on January 13, 2006 (copy enclosed), had not been made prior to the issuance of the above-identified patent grant. Per the Rule 312 Amendment, the correct Title for this application is "METHOD FOR SELECTING MODULATOR DETECTOR IN RECEIVER, AND RECEIVER." Applicant notes that the amendment to claim 6 and the new Abstract for this application, both of which were submitted with the above-referenced Rule 312 Amendment were, in fact, added to the application prior to issuance.

It is respectfully requested that a Certificate of Correction be issued to correct this error. Two PTO-1050 forms are attached to this request for that purpose. As this error was clearly the fault of the Patent Office, Applicant does not believe that a fee is required.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP

CHRISTINE H. MCCARTHY
Reg. No. 41844
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Customer No. 00909

Date: October 18, 2006
P.O. Box 10500
McLean, VA 22102

Enclosures: Two PTO 1050 forms
Photocopy of Rule 312 Amendment filed on January 13, 2006
Photocopy of date-stamped receipt for filed Rule 312 Amendment

PTO/SB/44 (04-05)
Approved for use through 04/30/2007. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7058148

APPLICATION NO.: 09/807,131

ISSUE DATE : June 6, 2006

INVENTOR(S) : MIKKO HUTTUNEN

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On title page, item 54 Title
replace "MODULATION DETECTION"
with --MODULATION DETECTOR--.

MAILING ADDRESS OF SENDER (Please do not use customer number below):
P. O. Box 10500
McLean, VA 22102

2

PTO/SB/44 (04-05)
Approved for use through 04/30/2007. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. :7058148

APPLICATION NO.: 09/807,131

ISSUE DATE : June 6, 2006

INVENTOR(S) : MIKKO HUTTUNEN

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McLean, VA 22102

RECEIPT FROM PTO FOR INDICATED ITEMS

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Use 2 postcards for all New Applications (including cont/Div/CIP)
Use this sheet when filing CPA or RCE

Appln. No: 09/807,131	Atty: Christine H. McCarthy/smw
First Inventor: MIKKO HUTTUNEN	Date: January 13, 2006
Title: METHOD FOR SELECTING MODULATION DETECTOR IN RECEIVER, AND RECEIVER	Attorney Docket No: 060258-0277995

ENCLOSED:

☒ RULE 312 AMENDMENT

CURRENT DUE DATE:

30558279_1.DOC

Attorney Docket: 060258-0277995
Client Reference: 2990563US/LT/HER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:
HUTTUNEN
Application No.: 09/807,131

Confirmation Number: 4288

Group Art Unit: 2634

Filed: May 23, 2001

Examiner: Ted M. Wang

Title: METHOD FOR SELECTING MODULATION DETECTOR IN RECEIVER, AND RECEIVER

January 13, 2006

AMENDMENT AFTER NOTICE OF ALLOWANCE UNDER 37 C.F.R. § 1.312

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

After receipt of the Notice of Allowance for the above-captioned patent application, but before payment of the Issue Fee, Applicants respectfully request entry of this Amendment under 37 C.F.R. § 1.312 for purposes of correcting the title, an error in claim 6, and adding a requisite Abstract to the specification.

IN THE TITLE:

Applicants would like to point out that the title in the USPTO records is incorrect. The USPTO records indicates DETECTION instead of DETECTOR in the title. The title should be corrected in the USPTO records as follows:

METHOD FOR SELECTING MODULATION DETECTOR IN RECEIVER, AND RECEIVER

IN THE ABSTRACT OF THE DISCLOSURE:

Please insert the following Abstract into the specification. The following Abstract replaces all other Abstracts filed with the above patent application.

ABSTRACT

A method for selecting a modulation detector in a receiver and a receiver which includes a first and a second modulation detector, mechanisms for determining at least one cross-correlation value between the stored training sequence and at least one training sequence of the received signal, and mechanisms for selecting the detector used for the detection of a signal to be received in response to the determined at least one cross-correlation value.

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A method for selecting a modulation detector in a receiver which includes at least a first and a second detector, the method comprising:

determining at least one cross-correlation value between a stored training sequence and at least one training sequence of a received signal; and

selecting a detector used for detection of a signal to be received on the basis of the determined at least one cross-correlation value,

wherein the received signal is a complex signal, whereby at least one cross-correlation value to be determined is a complex cross-correlation value and wherein the determining at least one cross-correlation value is performed for a given number of training sequences of the received signal, and the method further comprises:

calculating an absolute value of an average of the determined cross-correlation values;

selecting the first detector for the detection of the signal to be received if the absolute value of the average of the cross-correlation values exceeds a preset limit value; and

selecting the second detector if the absolute value of the average of the cross-correlation values is below a preset limit value.

2. (Previously Presented) The method of claim 1, wherein determining at least one cross-correlation value further comprises:

searching for an ideal synchronization point of the received signal, at which point the cross-correlation between the training sequence of the received signal and the stored training sequence has a maximum value; and

calculating the cross-correlation value between the stored training sequence and the training sequence of the received signal, which is obtained by shifting a synchronization point of the received signal for one symbol sequence at least one of forwards or backwards from the ideal synchronization point.

3. (Cancelled)

4. (Cancelled)

5. (Previously Presented) The method of claim 1, wherein the first detector includes a channel equalizer.

6. (Currently Amended) A receiver comprising:

a first and a second modulation detector;

means for determining at least one cross-correlation value between at least one training sequence of a received signal and a stored training sequence; and

means for selecting a detector used for detection of a signal to be received based on the determined at least one cross-correlation value,

wherein the received signal is a complex signal, whereby at least one cross-correlation value to be determined is a complex cross-correlation value, and wherein the receiver further comprises:

means for collecting a predetermined number of cross-correlation values determined from the training sequences of the received signal; and

means for calculating an absolute value of an average of the determined cross-correlation values,

wherein the means for selecting is configured to select the first detector for the detection of the signal to be received if the absolute value of the average of the cross-correlation values exceeds a preset limit value, and configured to select the second detector if the absolute value of the average of the cross-correlation values is below the preset limit value.

7. (Previously Presented) The receiver of claim 6, wherein the means for determining at least one cross-correlation value is configured to search for an ideal synchronization point of the received signal, at which point the cross-correlation between the training sequence of the received signal and the stored training sequence has a maximum value, and to calculate the cross-correlation value between the stored training sequence and the training sequence of the received signal, which is obtained by shifting a synchronization

point of the received signal for one symbol sequence at least one of forwards or backwards from the ideal synchronization point.

8. (Cancelled)

9. (Cancelled)

10. (Previously Presented) The receiver of claim 6, wherein the first detector includes a channel equalizer.

11. (Previously Presented) A receiver comprising:

a first and a second modulation detector configured to detect a received signal;

determination module configured to determine at least one cross-correlation value between at least one training sequence of a received signal and a stored training sequence; and

a first selector configured to select between the first and second modulation detectors,

wherein the first and second modulation detectors are configured to detect the received signal based on the determined at least one cross-correlation value,

wherein the received signal is a complex signal, whereby at least one cross-correlation value to be determined is a complex cross-correlation value,

the receiver further comprising:

a collector configured to collect a predetermined number of cross-correlation values determined from the training sequences of the received signal;

a second calculator configured to calculate an absolute value of an average of the determined cross-correlation values;

wherein the selector is configured to select the first detector for the detection of the signal to be received if the absolute value of the average of the cross-correlation values exceeds a preset limit value and configured to select the second detector if the absolute value of the average of the cross-correlation values is below the preset limit value.

12. (Previously Presented) The receiver of claim 11, wherein the determination module comprises:

a searcher configured to search for an ideal synchronization point of the received signal, at which point the cross-correlation between the training sequence of the received signal and the stored training sequence has a maximum value; and

a first calculator configured to calculate the cross-correlation value between the stored training sequence and the training sequence of the received signal, which is obtained by shifting a synchronization point of the received signal for one symbol sequence at least one of forwards or backwards from the ideal synchronization point.

13. (Cancelled)

14. (Cancelled)

15. (Previously Presented) The receiver of claim 11, wherein the first detector includes a channel equalizer.

REMARKS

By this Rule 312 Amendment, the correct title is shown to update the USPTO records, an Abstract has been added to the specification, and claim 6 has been amended.

This Rule 312 Amendment does not require further searching by the Examiner since the change is purely formal in nature. Accordingly, the submission of this Rule 312 Amendment should not hinder allowance of this application as a United States Patent.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,
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